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EXAMINER	
MATTIS, JASON E	

ART UNIT	PAPER NUMBER
2665	

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Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No.	Applicant(s)	
	09/823,495	SURAZSKI ET AL.	
	Examiner	Art Unit	
	Jason E Mattis	2665	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☐ Responsive to communication(s) filed on _____.

2a)☐ This action is **FINAL**. 2b)☒ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) 1-62 is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) 1-62 is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☐ The drawing(s) filed on _____ is/are: a)☐ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☐ All b)☐ Some * c)☐ None of:

1.☐ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☒ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☐ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08) Paper No(s)/Mail Date _____.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____ .
5) ☐ Notice of Informal Patent Application (PTO-152)
6) ☐ Other: _____.

DETAILED ACTION

Claim Objections

1. Claims 9, 26, 36, and 53 are objected to because of the following informalities.

Each of these claims contains a limitation similar to "assist the first device establish a communication with the second device". This limitation is worded poorly. It is recommended that this limitation be changed to "assist the first device in establishing communications with the second device" so that the claim is clearer.

Appropriate correction is required.

Claim Rejections - 35 USC § 103

2. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

3. Claims 1-8, 18-25, 32-35, and 45-52 are rejected under 35 U.S.C. 103(a) as being unpatentable over Born et al. (U.S. Pat. 6404887) in view of Gupta et al. (U.S. Pat. 5689556).

With respect to claims 1, 18, 32, and 45, Born et al. discloses a signaling network switch using instructions stored on a storage medium to execute a method **(See column 5 lines 25-65 and Figure 1 of Born et al. for reference to an inter-exchange carrier (IXC) office 104, which is a network switch that has stored instructions to route calls over a network)**. Born et al. also discloses a network interface for coupling to a network **(See column 5 lines 25-45 and Figure 1 of Born et al. for reference to IXC 104 having network interfaces to other elements of the system 100)**. Born et al. further discloses a processor coupled with the network interface **(See column 5 lines 46-65 and Figure 1 of Born et al. for reference to the IXC 104 using interfaces to route calls between calling and called parties, meaning the IXC 104 acts as a processor to route the calls)**. Born et al. also discloses establishing a first connection through a network **(See column 8 lines 28-41 and Figure 3 of Born et al. for reference to, at point 6 of Figure 3, the IXC selecting an outbound termination trunk, which is a first connection through the network, for forwarding a call)**. Born et al. further discloses establishing a second connection **(See column 8 lines 28-41 and Figure 3 of Born et al. for reference to, at points 4 and 5 of Figure 3, the IXC establishing a second connection through the network with a local office of a calling party)**. Born et al. also discloses receiving audio content through the second connection and transmitting through the first connection data packets that contain an encoded form of the audio content **(See column 5 lines 46-65 and Figure 1 of Born et al. for reference to transporting call data, which is encoded audio content, through the connections over the network from the**

calling party to the called party). Although Born et al. does disclose sending a signal through the first connection to control the operation of an echo canceller **(See column 7 lines 1-30 of Born et al. for reference to controlling the operation of an echo canceller using a signal)**, Born et al. does not specifically disclose analyzing the audio content and transmitting a warning signal through the first connection if a periodic signal is detected in the audio content.

With respect to claims 2, 19, 33, and 46, Born et al. does not disclose that analyzing the audio content is performed by looking ahead.

With respect to claims 3, 20, and 47, Born et al. does not disclose that the periodic signal has a double periodicity.

With respect to claims 7, 24, 34, and 51, Born et al. does not disclose determining an ending of the periodic signal and transmitting a clear signal corresponding to the ending.

With respect to claims 1, 2, 3, 7, 18, 19, 20, 24, 32, 33, 34, 45, 46, 47, and 51, Gupta et al., in the field of communications, discloses analyzing audio content and transmitting a warning signal if a periodic signal is detected **(See column 4 lines 27-37, column 5 line 66 to column 6 line 9, and Figure 6 of Gupta et al. for reference to analyzing audio content by searching for a DTMF tone, which is a periodic signal, and for reference to setting a flag, which is a warning signal that is set when a periodic signal is detected)**. Gupta et al. also discloses that analyzing the audio content is performed by looking ahead **(See column 4 lines 38-58 and Figure 6 of Gupta et al. for reference to sampling and analyzing audio content by looking at**

the audio content before it is sent to the end user). Gupta et al. further discloses that the periodic signal has a double periodicity **(See column 4 lines 27-37 of Gupta et al. for reference to the periodic signal being a DTMF tone, which has double periodicity)**. Gupta et al. also discloses determining an ending of the periodic signal and transmitting a clear signal corresponding to the ending **(See column 4 lines 27-37, column 5 line 66 to column 6 line 9, and Figure 6 of Gupta et al. for reference to the DTMF detector running continuously and for reference to continuously updating the flag, meaning that when the end of the period signal is detected, the flag will be set to false, which is a clear signal corresponding to the end of the periodic signal)**. The periodic signal detector of Gupta et al. has the advantage of making sure that DTMF and other narrowband signals do not disrupt the operation of an echo canceller **(See column 2 lines 6-36 of Gupta et al. for reference to this advantage)**.

It would have been obvious for one of ordinary skill in the art at the time of the invention, when presented with the work of Gupta et al., to combine the periodic signal detector of Gupta et al. with the system and method of Born et al., with the motivation being to make sure that DTMF and other narrowband signals do not disrupt the operation of an echo canceller (See column 2 lines 6-36 of Gupta et al. for reference to this advantage).

With respect to claims 4, 21, and 48, Born et al. discloses that the signal is in-band **(See column 5 line 66 to column 6 line 15 of Born et al. for reference to the**

signals that control the echo canceller being sent in-band with the call data using bit robbing).

With respect to claims 5, 22, and 49, Born et al. discloses that the signal is out of band **(See column 2 lines 19-27 of Born et al. for reference to using CCS signaling send control signals out of band in a dedicated control channel)**.

With respect to claims 6, 23, and 50, Born et al. discloses that the warning signal is a named signaling event **(See column 7 lines 1-30 of Born et al. for reference to echo canceller controlling signal being a named signal event that is used to set the echo canceller to an inactive mode)**.

With respect to claims 8, 25, 35, and 52, Born et al. discloses determining a duration to send a signal to an echo canceller and encoding the duration in the signal **(See column 7 liens 1-30 of Born et al. for reference to using a signal to set the echo canceller in an active or inactive mode for a particular number of frames and/or for a particular amount of time)**.

4. Claims 9-11, 26-28, 36-44, and 53-62 are rejected under 35 U.S.C. 103(a) as being unpatentable over Born et al. in view of Gupta et al. as applied to claims 1-8, 18-25, 32-35, and 45-52 above, and further in view of Meek (U.S. Pat. 6304655).

With respect to claims 9, 26, 36, and 53, Born et al. discloses a signaling network call manager using instructions stored on a storage medium to execute a method **(See column 5 lines 25-65 and Figure 1 of Born et al. for reference to an inter-exchange carrier (IXC) office 104, which is a signaling network call manager**

that has stored instructions to route calls over a network). Born et al. also discloses a network interface for coupling to a network **(See column 5 lines 25-45 and Figure 1 of Born et al. for reference to IXC 104 having network interfaces to other elements of the system 100)**. Born et al. further discloses a processor coupled with the network interface **(See column 5 lines 46-65 and Figure 1 of Born et al. for reference to the IXC 104 using interfaces to route calls between calling and called parties, meaning the IXC 104 acts as a processor to route the calls)**. Born et al. further discloses establishing a first network call manager connection with a first device **(See column 8 lines 28-41 and Figure 3 of Born et al. for reference to, at point 6 of Figure 3, the IXC selecting an outbound termination trunk, which is a first connection through the network, for forwarding a call)**. Born et al. further discloses establishing a second network call manager connection with a second device **(See column 8 lines 28-41 and Figure 3 of Born et al. for reference to, at points 4 and 5 of Figure 3, the IXC establishing a second connection through the network with a local office of a calling party)**. Born et al. also discloses assisting the first devices in establishing a connection with the second device through the packet network **(See column 8 lines 27-51 and Figure 3 of Born et al. for reference to the IXC assisting in establishing a connection)**. Born et al. further discloses determining a duration to send a signal to an echo canceller and encoding the duration in the signal **(See column 7 liens 1-30 of Born et al. for reference to using a signal to set the echo canceller in an active or inactive mode for a particular number of frames and/or for a particular amount of time)**. Although Born et al. does disclose sending a signal

through the first connection to control the operation of an echo canceller **(See column 7 lines 1-30 of Born et al. for reference to controlling the operation of an echo canceller using a signal)**, Born et al. does not specifically disclose generating a periodic signal and transmitting a warning signal and a periodic signal through one of the first and second connections. As discussed in the rejections above, Gupta et al. discloses a periodic signal being generated and a warning signal being sent in response to the periodic signal being detected **(See column 4 lines 27-37, column 5 line 66 to column 6 line 9, and Figure 6 of Gupta et al. for reference to analyzing audio content by searching for a DTMF tone, which is a periodic signal, and for reference to setting a flag, which is a warning signal that is set when a periodic signal is detected)**. The combination of Born et al. and Gupta et al. does not disclose that the network is a packet network.

With respect to claims 39 and 56, Born et al. discloses an article using instructions stored on a storage medium to execute a method **(See column 5 lines 25-65 and Figure 1 of Born et al. for reference to an inter-exchange carrier (IXC) office 104, which is an article that has stored instructions to route calls over a network)**. Born et al. also discloses establishing a communication connection with a device **(See column 8 liens 28-51 and Figure 3 of Born et al. for reference to IXC establishing a call, or connection between a calling party device and a called party device)**. Born et al. also discloses receiving audio content through the connection **(See column 5 lines 46-65 and Figure 1 of Born et al. for reference to transporting call data, which is encoded audio content, through the connections**

over the network from the calling party to the called party). Although Born et al. does disclose sending a signal through the first connection to control the operation of an echo canceller **(See column 7 lines 1-30 of Born et al. for reference to controlling the operation of an echo canceller using a signal)**, Born et al. does not specifically disclose receiving a warning signal that a periodic tone is encoded in the audio and disabling an adaptive acoustic echo canceller in response to the warning signal. As discussed in the rejections above, Gupta et al. discloses a warning signal being sent in response to the periodic signal being detected and disabling an adaptive acoustic echo canceller in response to the signal **(See column 4 lines 27-37, column 5 line 66 to column 6 line 9, and Figure 6 of Gupta et al. for reference to analyzing audio content by searching for a DTMF tone, which is a periodic signal, and for reference to setting a flag, which is a warning signal that is set when a periodic signal is detected and is used to disable an echo canceller)**. The combination of Born et al. and Gupta et al. does not disclose that the network is a packet network.

With respect to claims 9, 29, 36, 39, 53, and 56, Meek, in the field of communications, discloses a packet network that transmits audio data packets and uses an echo canceller **(See column 10 liens 47-52 of Meek for reference to the network with the echo canceller being a IP network)**. Using the system and method with a packet network has the advantage of allowing the functionality of the controlled echo canceller to be used in a voice over IP environment.

It would have been obvious for one of ordinary skill in the art at the time of the invention, when presented with the work of Meek, to combine the IP network of Meek,

with the system and method of Born et al. and Gupta et al., with the motivation being to allow he functionality of the controlled echo canceller to be used in a voice over IP environment.

With respect to claims 10, 27, 37, 54 and 59, Gupta et al. discloses that the periodic signal has a double periodicity **(See column 4 lines 27-37 of Gupta et al. for reference to the periodic signal being a DTMF tone, which has double periodicity)**.

With respect to claims 11, 28, 38, and 55, Gupta et al. discloses identifying a type of the periodic signal and determining a time duration from the identified type **(See column 5 line 66 to column 6 line 9, and Figures 4-8 of Gupta et al. for reference to determining the type of periodic signal, for example determining if the periodic signal is a generic signal, a 2100 Hz signal, a DTMF signal, or a dial tone signal, and based on which signal is found, controlling the time duration in a different manner as disclosed in the flow charts of Figures 4-8)**.

With respect to claims 40 and 57, Gupta et al. discloses receiving a clear signal and re-enabling the adaptive acoustic echo canceller in response to the clear signal **(See column 4 lines 27-37, column 5 line 66 to column 6 line 9, and Figure 6 of Gupta et al. for reference to the DTMF detector running continuously and for reference to continuously updating the flag, meaning that when the end of the period signal is detected, the flag will be set to false, which is a clear signal that re-enables the echo canceller and corresponds to the end of the periodic signal)**.

With respect to claims 41 and 58, Born et al. discloses determining a duration to send a signal to an echo canceller and encoding the duration in the signal **(See**

column 7 liens 1-30 of Born et al. for reference to using a signal to set the echo canceller in an active or inactive mode for a particular number of frames and/or for a particular amount of time).

With respect to claims 42 and 60, Born et al. discloses that the signal is in-band **(See column 5 line 66 to column 6 line 15 of Born et al. for reference to the signals that control the echo canceller being sent in-band with the call data using bit robbing).**

With respect to claims 43 and 61, Born et al. discloses that the signal is out of band **(See column 2 lines 19-27 of Born et al. for reference to using CCS signaling send control signals out of band in a dedicated control channel).**

With respect to claims 44 and 62, Born et al. discloses that the warning signal is a named signaling event **(See column 7 lines 1-30 of Born et al. for reference to echo canceller controlling signal being a named signal event that is used to set the echo canceller to an inactive mode).**

5. Claims 12-13 and 29-30 are rejected under 35 U.S.C. 103(a) as being unpatentable over Washiya (U.S. Pat. 6700979) in view of Gupta et al.

With respect to claims 12 and 29, Washiya discloses a telephone comprising a decoder for decoding the data packets, a speaker for playing out the incoming audio signal, a microphone for converting sound into an outgoing audio signal, an acoustic echo canceller for generating a canceling signal, and an encoder for encoding the outgoing audio signal and canceling signal **(See column 2 line 58 to column 3 line 6**

and Figure 1 of Washiya for reference to a radio 8, which is an encoder and a decoder, a loudspeaker 9, a microphone 11, and an echo canceller 1, which are part of a telephone). Washiya does not disclose a detector for detecting a warning signal and outputting a disable signal that disables the echo canceller.

With respect to claims 13 and 30, Washiya does not disclose that the detector is adapted to detect a clear signal and discontinue the disable signal responsive to the clear signal.

With respect to claims 12-13 and 29-30, Gupta et al., in the field of communications, discloses analyzing audio content and transmitting a warning signal to an echo canceller that disables the echo canceller if a periodic signal is detected **(See column 4 lines 27-37, column 5 line 66 to column 6 line 9, and Figure 6 of Gupta et al. for reference to analyzing audio content by searching for a DTMF tone, which is a periodic signal, and for reference to setting a flag, which is a warning signal that is set when a periodic signal is detected and used to disable an echo canceller)**. Gupta et al. also discloses determining an ending of the periodic signal and transmitting a clear signal corresponding to the ending **(See column 4 lines 27-37, column 5 line 66 to column 6 line 9, and Figure 6 of Gupta et al. for reference to the DTMF detector running continuously and for reference to continuously updating the flag, meaning that when the end of the period signal is detected, the flag will be set to false, which is a clear signal corresponding to the end of the periodic signal)**. The periodic signal detector of Gupta et al. has the advantage of making sure that DTMF and other narrowband signals do not disrupt the operation of an

echo canceller **(See column 2 lines 6-36 of Gupta et al. for reference to this advantage)**.

It would have been obvious for one of ordinary skill in the art at the time of the invention, when presented with the work of Gupta et al., to combine the periodic signal detector of Gupta et al. with the system and method of Washiya, with the motivation being to make sure that DTMF and other narrowband signals do not disrupt the operation of an echo canceller **(See column 2 lines 6-36 of Gupta et al. for reference to this advantage)**.

6. Claims 14-17 and 31 are rejected under 35 U.S.C. 103(a) as being unpatentable over Washiya in view of Gupta et al. as applied to claims 12-13 and 29-30 above, and further in view of Born et al.

With respect to claims 14 and 31, the combination of Washiya and Gupta et al. does not disclose determining a duration to send a signal to an echo canceller, encoding the duration in the signal, and discontinuing the disable signal after the time duration.

With respect to claim 15, the combination of Washiya and Gupta et al. does not disclose that the signal is in-band.

With respect to claim 16, the combination of Washiya and Gupta et al. does not disclose that the signal is out of band.

With respect to claim 17, the combination of Washiya and Gupta et al. does not disclose that the warning signal is a named signaling event.

With respect to claims 14-17 and 31, Born et al., in the field of communications, discloses determining a duration to send a signal to an echo canceller, encoding the duration in the signal, and discontinuing the disable signal after the time duration **(See column 7 liens 1-30 of Born et al. for reference to using a signal to set the echo canceller in an active or inactive mode for a particular number of frames and/or for a particular amount of time)**. Born et al. also discloses that the signal is in-band **(See column 5 line 66 to column 6 line 15 of Born et al. for reference to the signals that control the echo canceller being sent in-band with the call data using bit robbing)**. Born et al. further discloses that the signal is out of band **(See column 2 lines 19-27 of Born et al. for reference to using CCS signaling send control signals out of band in a dedicated control channel)**. Born et al. also discloses that the warning signal is a named signaling event **(See column 7 lines 1-30 of Born et al. for reference to echo canceller controlling signal being a named signal event that is used to set the echo canceller to an inactive mode)**. Disabling an echo canceller for a specific amount of time has the advantage of allowing the echo canceller to return to an active mode without using the additional signal that is needed when using a clear signal to reactivate the echo canceller.

It would have been obvious for one of ordinary skill in the art at the time of the invention, when presented with the work of Born et al., to combine disabling an echo canceller for a specific amount of time, as suggested by Born et al., with the system of Washiya and Gupta et al., with the motivation being to allow the echo canceller to return to an active mode without using the additional signal that is needed when using a clear

signal to reactivate the echo canceller.

Conclusion

7. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure. Okuda (U.S. Pat. 6735303) discloses a periodic signal detector that is used to control an echo canceller.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Jason E Mattis whose telephone number is (571) 272-3154. The examiner can normally be reached on M-F 8AM-4:30PM.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Huy Vu can be reached on (571) 272-3155. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

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